

Liquefied Natural Gas Imports

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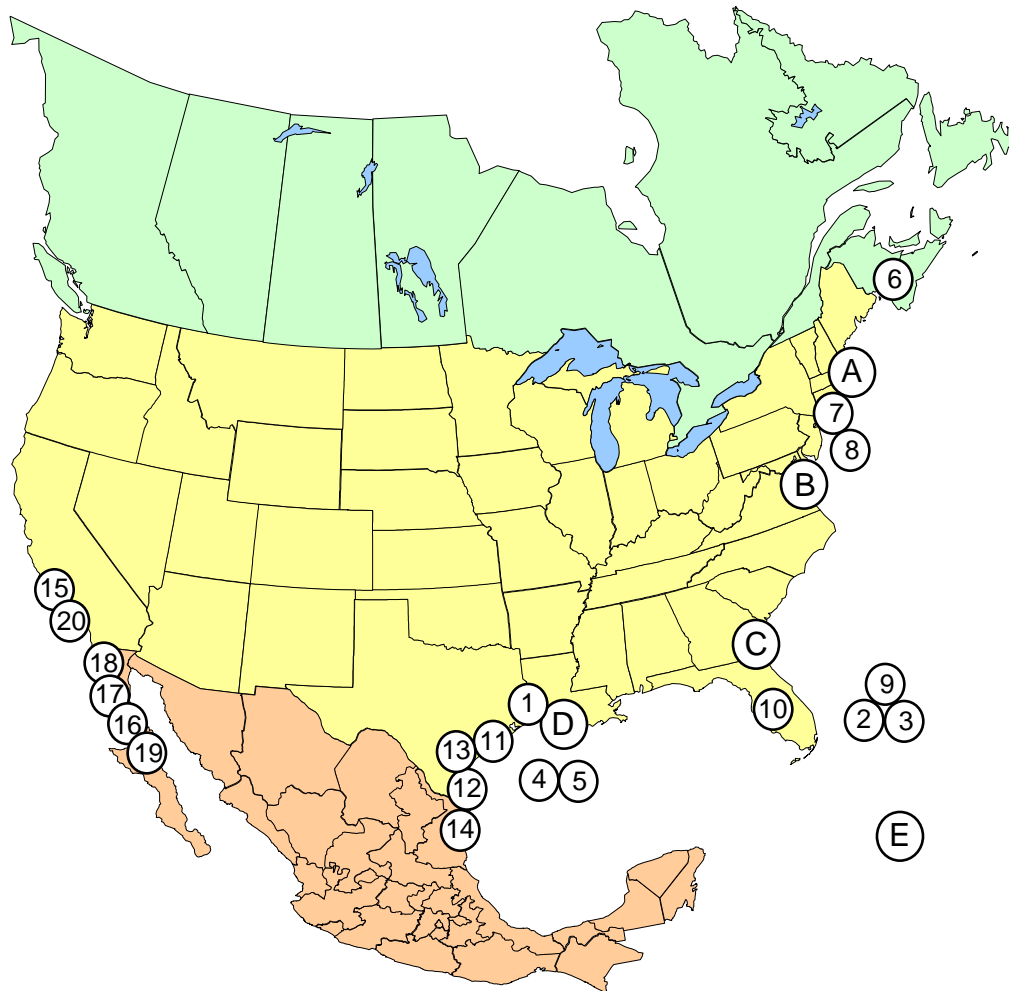
Views of FERC Staff ONLY

NOTICE :

The views and information discussed herein are only attributable to the author (Richard Foley, FERC Staff), and does not necessarily represent the views or findings of the Commission or its individual members. This presentation is based on the best information available as of February 28, 2003.

Existing and Proposed LNG Import Terminals

*** Top 25 ***



January 2003

Existing Terminals with Expansions

- A. Everett, MA: 0.715 Bcfd (Tractebel)
- B. Cove Point, MD: 1.0 Bcfd (Dominion)
- C. Elba Island, GA: 1.2 Bcfd (El Paso)
- D. Lake Charles, LA: 1.3 Bcfd (CMS Energy)
- E. Guayanilla Bay, P.R.: 0.093 Bcfd (Eco Electrica)

Proposed Terminals – FERC

- 1. Hackberry, LA: 1.5 Bcfd, 2006 (Dynegy/Sempra)
- 2. Bahamas: 0.83 Bcfd, 2005 (AES Ocean Express – U.S. Pipeline Only)
- 3. Bahamas: 0.83 Bcfd, 2005 (Calypso Tractebel – U.S. Pipeline Only)

Proposed Terminals – Coast Guard

- 4. Port Pelican: 1 Bcfd, 2005 (Chevron Texaco)
- 5. Gulf of Mexico: 0.5 Bcfd, 2004 (El Paso Global)

Planned Terminals

- 6. St. John, NB: 0.5 Bcfd, 2005+(Irving Oil)
- 7. Fall River, MA: 0.4 Bcfd, 2006 (Weaver's Cove Energy)
- 8. Belmar, NJ Offshore : N/A, N/A (El Paso Global)
- 9. Bahamas: 0.5 Bcfd, 2005 (El Paso Sea Fare)
- 10. Tampa, FL: 0.5 Bcfd, 2005+(BP)
- 11. Freeport, TX: 0.55 Bcfd, 2005+(Cheniere LNG Partners)
- 12. Brownsville, TX: 0.55 Bcfd, 2006(Cheniere LNG Partners)
- 13. Corpus Christi, TX: 0.55 Bcfd, 2005+(Cheniere LNG Partners)
- 14. Altamira, Tamulipas: 0.5-1 Bcfd, 2004 (El Paso)
- 15. S. California Offshore: 0.5 Bcfd, 2005 (Chevron Texaco)
- 16. Baja California: 0.7 Bcfd, 2005 (El Paso)
- 17. Baja California: 1.0 Bcfd, 2005 (Marathon)
- 18. Baja California: 0.5 Bcfd, 2005 (Chevron Texaco)
- 19. Baja California: 1.0 Bcfd, 2005 (CMS Energy)
- 20. Los Angeles Harbor, CA: N/A, N/A (Mitsubishi)

FERC Approval Process – **ONSHORE ONLY**

Economic Oversight of LNG Terminal Services:

Market Entry, Access, Rate Design,

Public Need / Public Interest

LNG Terminal Siting:

Safety, Security, Environment, Plant Design

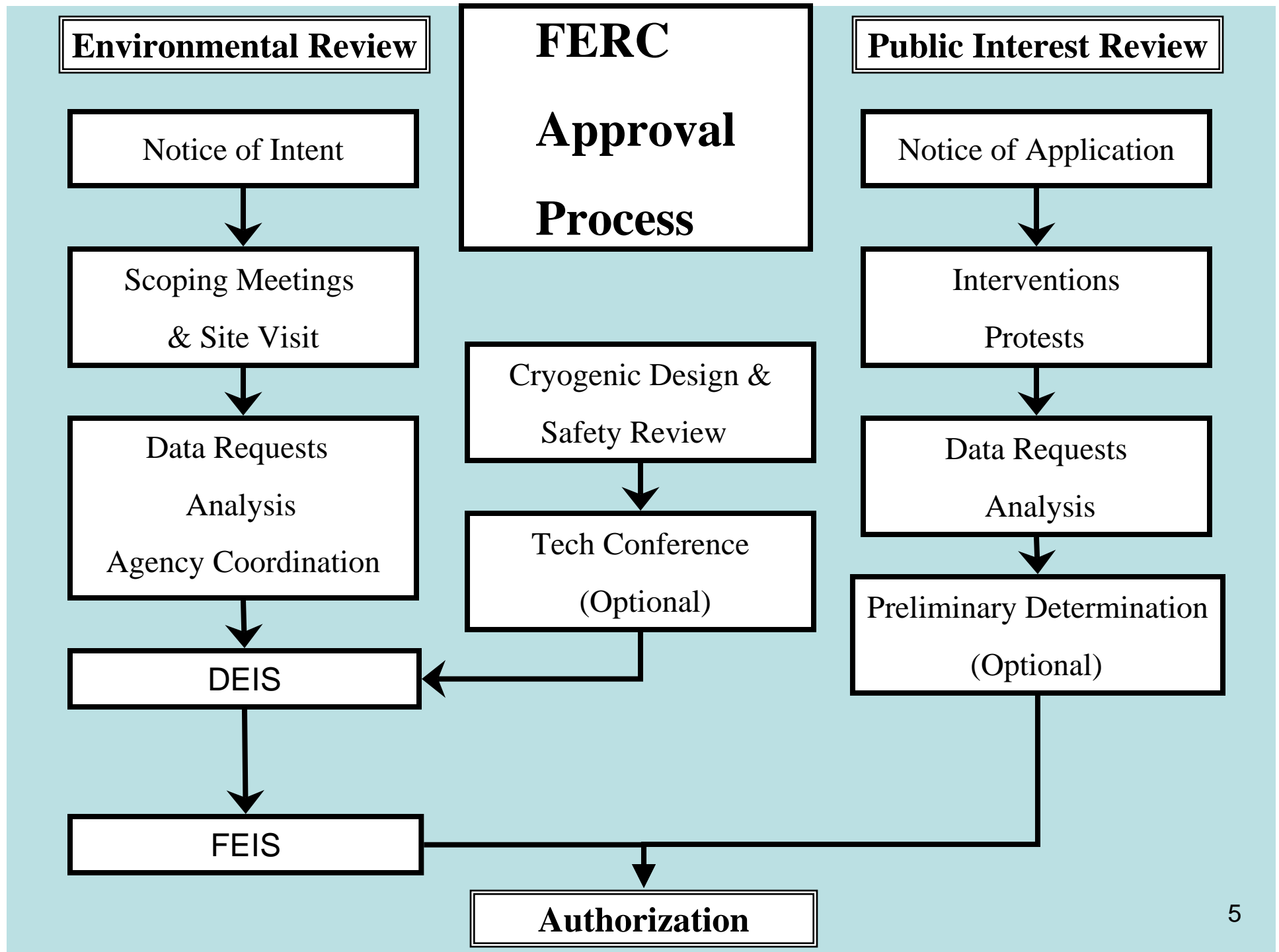
Coast Guard – **OFFSHORE ONLY**

Deepwater Port Act Amended 2002

Department of Energy – **COMMODITY**

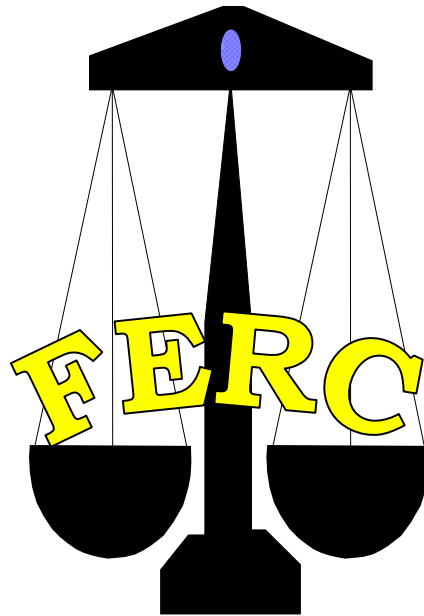
Authorization to import the LNG commodity

Based on US energy policy








Authorizing Projects is a Balancing Act

- Owners
- Customers
- Competitors
- Landowners
- Agencies
- NGOs
- Congress



- NGA
- NEPA/CEQ
 - ESA
 - NHPA
 - CZMA
 - DoT

More Balancing . . .

People Like...		But They Also Want...
Due Process		Expedited Process
Smaller Government		Effective Government
Less Regulation		Assurance of Fair Markets
Market-dictated Outcomes		Protection from Market Dysfunctions, Unexpected Risk, and Unjust Rates
Protection for the Environment and Property Interests		Ample Supplies of Low-cost Energy

Liquefied Natural Gas Imports

Economic Oversight



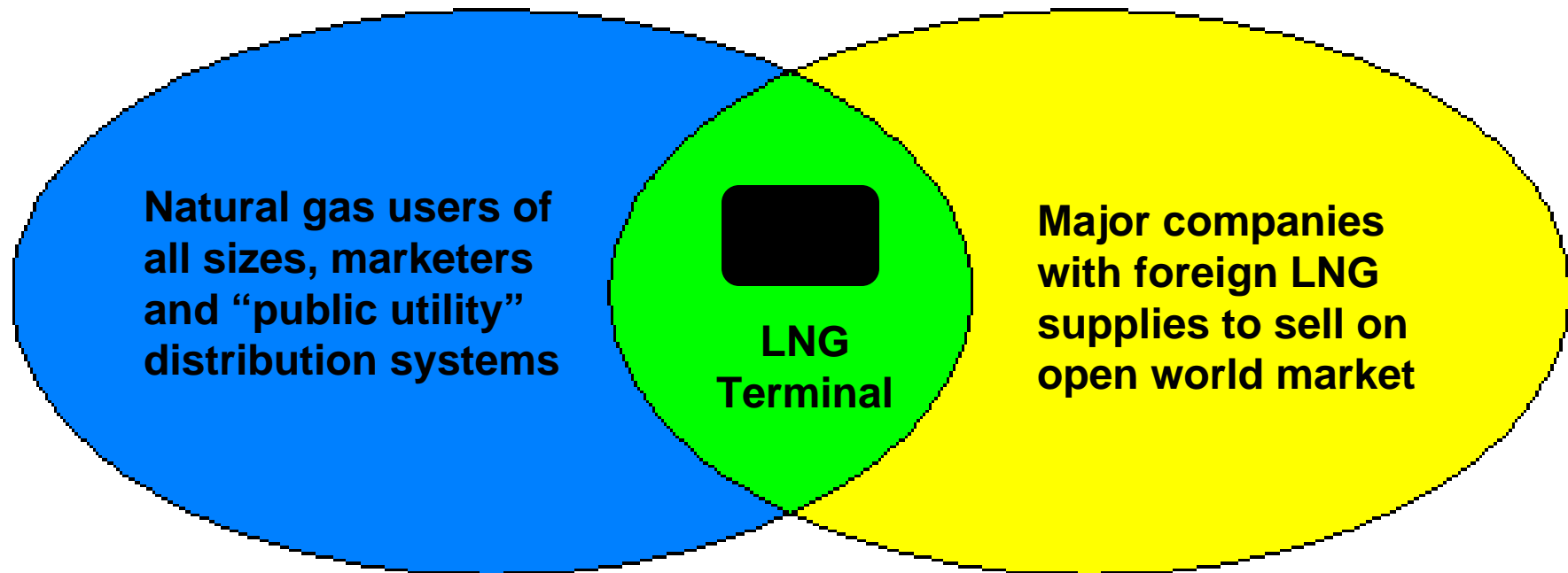
Natural Gas Act

- Sec. 7 gives the Commission jurisdiction over transportation and sale for resale of natural gas in interstate commerce and construction and operation of facilities for that purpose.
- Sec. 3 gives the Commission jurisdiction over siting and construction and operation of facilities for importing and exporting gas, and LNG is natural gas under the law.

NGA Sec. 3 – Imports & Exports

- DOE Reorganization Act - DOE approves imports and exports of the commodity
- FERC approves place of entry or exit, siting, construction and operation of border crossing pipeline and LNG facilities
- FEFC Reaffirms Jurisdictional Challenge
See Dynegy LNG Production Terminal, 97 FERC ¶ 61,231 (2001)
- FERC Jurisdiction is “Plenary and Elastic”
See Distrigas Corp. v Federal Power Comm, 495 F.2d 1057 (1974)

Regulatory Approaches to the Commercial / Economic Function of LNG Terminals



Interstate Commerce – Section 7

- Customer choice / open access “public utility” system model
- Traditional Cost-Based Rates or Market-Based Rates
- Full Open Access Tariff / Open Season
- Certificate / Public Need Policy applies

Foreign Commerce – Section 3

- International Proprietary LNG Supply System Model
- No Cost & Rate Oversight: Product competes with unregulated domestic supply
- Third Party Access at Operator’s Discretion
- Certificate/Public Need Policy does not apply

Review of Open Access Policy for LNG

Docket No. PL02-9, Natural Gas Markets Conference (2002)

The Commission recognized that :

- LNG imports will be a key supply source in the U.S.
- It was time to reexamine existing open access policies and regulatory goals in order to remove unnecessary economic regulatory barriers to the development of LNG terminals.

The Commission ruled in the Hackberry case that it would not exercise cost & rate oversight for the LNG terminal because the delivered LNG product competes with unregulated domestic supply.

Liquefied Natural Gas Imports

Siting, Safety, Security,
and the Environment



Elements of FERC Site Review

- Environmental Review under NEPA
- Cryogenic Design & Technical Review
- Post-Authorization Inspection Program

Environmental Document (EA or EIS)

- Environmental Issues – endangered species, essential fish habitat, wetlands, dredging, air emissions, and coastal zone consistency
- Safety Exclusion Zones – fires and flammable vapor clouds from design spills
- Marine Safety – Coast Guard operating plans, vessel traffic congestion
- Seismic Review – detailed facility analysis in high seismic zones
- Terrorism and Security – coordination with Coast Guard and Office of Pipeline Safety

Cryogenic Design & Technical Review

- Design of plant equipment, instrumentation, and controls.
- Hazard detection, hazard control, and spill containment.
- Vapor cloud and radiation exclusion zones.
- Compliance with Department Of Transportation and National Fire Prevention Association safety requirements.
- Operational reliability and security.

Biennial LNG Site Inspections

- Physically inspect the condition of all major plant equipment
- Review plant operations, maintenance, and problems identified in semi-annual reports for prior 2 years
- Inspect changes in plant design, operations, and safety systems
- Inspect plant security measures
- Document findings in standard *Cryogenic Design and Inspection Manual*
- Investigate plant accidents

Liquefied Natural Gas Imports



What's Getting Built

Four Countries – Planned, Filed, Approved, Financed, Built * Top 25

- United States 16 projects
 - FERC for onshore (12 projects)
 - Coast Guard offshore (4 projects)
- Mexico 5 projects
- Bahamas 3 projects
- Canada 1 project

Remote Siting vs. Market Area Locations

What is the Market and Where ?

- Winter heating load
- Summer cooling load
- New combined cycle power plants
- Replace Gulf Coast pipeline supply

Obstacles to Market-area siting :

- Greenfield sites – availability; land use/environmental compatibility; public concerns
- Brownfield sites – site and dredge spoil contamination; vessel traffic congestion
- Offshore sites – technology; pipeline landfall; now under Deepwater Ports Act amendments – Coast Guard

Onshore Mainland LNG Capacity

Existing LNG Terminals (In service as of 2002)	530 Bcf/yr
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Existing & Under Construction (Work progressing in 2003)	<u>+ 360</u> 890 Bcf/yr
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Existing, Under Construction, inc. Preliminary Determinations (Final FERC action pending 2004 -05)	<u>+ 655</u> 1,545 Bcf/yr
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ONE GUY's Projection of LNG's Future in North America

(How to fill-up on LNG by 2012 – Tcf/yr)

<u>Year</u>	<u>Capacity</u>	<u>Imports</u>
2001-02	.530	.238
2004-05	1.0	1.0
2008-10	2.7	2.5 *
2012-15	3.7	3.5 *

* Given positive world energy / LNG price and supply assumptions.

DETAIL's For ONE GUY's Projection of LNG's Future in North America (by Richard Foley, FERC/OEP Staff)
 25 to 30 Tcf Market * Optimistic / Realistic LNG share of market = 3 Tcf

Project (Bcf/yr)	Existing Capacity	Include Capacity Pending at FERC	Include Planned Capacity	2001 Volumes	2004 Volumes	2008 Volumes	2012 Volumes
Distrigas	90 - 100	90 - 100	90 - 100	90	100	100	100
Cove Point	- 0 -	270	365	- 0 -	270	270 - 365	365
Elba Island	160	290	290	2.5	290	290	290
Lake Charles	270	360	360	146	360	360	360
Hackberry		525	525	- 0 -	- 0 -	525	525
Onshore Gulf			200	- 0 -	- 0 -	200	200
Bahamas		200 - 400	200 - 400	- 0 -	- 0 -	200 - 400	200 - 400
Offshore Gulf			350 - 600	- 0 -	- 0 -	350 - 600	350 - 600
Baja Mexico			365 - 500	- 0 -	- 0 -	365 - 500	365 - 500
Other			365	- 0 -	- 0 -	- 0 -	365
T O T A L S (Tcf/yr)	520 - 530	1.7 - 1.9	3.1 - 3.7	238.5	1.0	2.7-3.3	3.1-3.7
EcoElectrica	65 -130	65 -130	65 -130	22	50	75	75
Kenai/Cook Inlet	(65)	(65)	(65)	(65)	(65)	(65)	(65)